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| OAG, D/A ltr, 29 Apr 1980 |

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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M) (10 Jan 68) FOR OT RD-674092

15 January 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 19th
Engineer Battalion (Combat)(Army), Period Ending
31 October 1967

TO: SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation by
USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in
accordance with paragraph 6c and d, AR 1-19. Evaluations and cor-
rective actions should be reported to ACSFOR OT within 90 days of re-
ceipt of covering letter.

2. Information contained in this report is provided to insure
appropriate benefits in the future from Lessons Learned during current
operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

1 Incl
as

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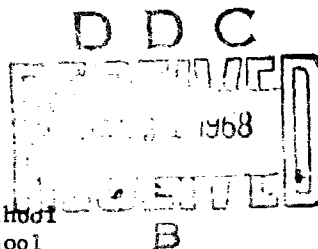
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Att: FOR OT RD - Wash., D.C. 20310

AD82583N

DEPARTMENT OF THE ARMY
HEADQUARTERS 19TH ENGINEER BATTALION (COMBAT)(ARMY)
APO San Francisco 96238

EGD-BE-3

31 October 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 October 1967.

THRU: Commanding Officer, 45th Engineer Group (Const), APO
San Francisco 96238
Commanding General, 18th Engineer Brigade, APO
San Francisco 96377
Commanding General, U. S. Army Engineer Command, Vietnam
(Prov), APO San Francisco 96375
Commanding General, United States Army, Vietnam, ATTN:
AVHCC-DH, APO San Francisco 96307
Commander in Chief, United States Army, Pacific, ATTN:
GPOP-OT, APO San Francisco 96558

TO: Assistant Chief of Staff for Force Development,
Department of the Army (ACSFOR-DA), Washington, D. C.
20310

SECTION I. Significant Organization or Unit Activities.

1. Command:

a. During the quarterly reporting period August through October 1967 the 19th Engineer Battalion (C)(A) has been primarily engaged in opening and upgrading QL-1 from Tam Quan to Duc Pho.

b. The last two weeks of July were spent in moving the Battalion from its old location in Qui Nhon to its new headquarters North of LZ English (See Inclosure 1) with the mission of opening and upgrading QL-1, from Tam Quan to Duc Pho, to a class 31, all weather road capable of carrying one way traffic by 1 October 1967.

c. The 19th Engineer Battalion (C)(A), organized under TOE 5-35E, consists of HHC, and four line companies. Attached to the 19th Engineer Battalion (C)(A) is the 137th Engineer Company (IE) and one section of the 513th Engineer Company (DT). The advance party of the 73rd Engineer Company (CS) arrived in the Battalion AOR just prior to the close of the reporting period.

d. Upon completion of the initial mission, the 19th Engineer Battalion (C)(A) was assigned the further mission of upgrading QL-1 to MACV standard. from the Bong Son river to Duc Pho.

FOR OT RD
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2. Personnel, Administration, Morale and Discipline.

(None)

3. Intelligence and Counter Intelligence.

a. Intelligence efforts consisted primarily of special and hasty reconnaissances within the Battalion's area of responsibility. Four special recons were conducted. They included upgrading of previously submitted bridge reconnaissance reports for bridges between QL-1392 (BS 910161) and QL-1419 (BS 807376), a recon to find a northern quarry site between coordinates BS 909148 and BS 918169, and a recon to locate a possible bivouac site for "D" Company, 19th Engineer Battalion (C)(A), at either BS 868316, BS 823345, BS 852365, or BS 857370. This amounted to 121 miles of reconnaissance.

b. Many incidents threatened the security of Battalion elements during the reporting period. Mine sweep teams on QL-1 from Bong Son to Duc Pho located 27 mines of various types which were destroyed; 10 mines were detonated by vehicles and one mine sweep team was ambushed. The Battalion experienced 10 incidents of sniper fire; 6 incidents of grenades being thrown during the hours of darkness, and one mortar attack of approximately ten rounds at the CP area. These incidents resulted in 21 wounded and 7 killed in the Battalion. During the period, one NVA Soldier approached the battalion perimeter and turned himself in "Choi Hoia".

4. Plans, Operations and Training.

a. During the quarterly reporting period, elements of this Battalion spent 15 days in rear area construction, one day in company movement, 69½ days in operational support and LOC upgrading, and 6½ days in training.

b. When the Battalion moved north, "C" and "D" Company remained behind to continue their mission of rear area construction near Long My. They were placed under OPCON of the 84th Engineer Battalion (Const) and required to finish 8 each 120' X 200' Butler buildings in the Long My Depot. Upon completion of this mission they rejoined the Battalion.

c. Initial effort on QL-1 concentrated on opening the road. This involved a great deal of work filling all large holes in the road and constructing hasty bypasses, utilizing culverts

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where necessary. To keep the road open required the spanning of 16 gaps over which the bridges had been destroyed. This was accomplished with the construction of 7 Bailey bridges (total length 690 feet), the decking of 3 existing railroad bridges, and the building of 6 timber trestle bridges. The timber trestle bridges were class 35 two way, class 50 one way, and ranged in length from 20 to 60 feet.

d. Concurrent with the road work and bridge building, elements of the 137th Engineer Company (LE) were assigned the task of placing a seal coat on the road. This involved covering the road with sand-asphalt mix. All of QL-1 in the original AOR was surfaced. The 137th Engineer Company (LE) also received the mission of operating a rock crusher and quarry site in the vicinity of Duc Pho. The company produces approximately 500 cubic yards of rock per day for use of the Americal Division.

e. In order to increase the Battalion's capability in the northern area of the AOR, "D" Company was moved from the construction effort in Qui Nhon to a new bivouac site approximately 5 miles south of Duc Pho (see Inclosure 1). The move was accomplished on 20 August 1967.

f. Phase I of QL-1 upgrading, the opening of the road to class 31, one way, all weather traffic, was completed on 8 September 1967, three weeks ahead of schedule. At this time the battalion assumed the mission of upgrading QL-1 to comply with MACV standards.

g. On 22 September 1967, "C" Company was moved from Qui Nhon to a new bivouac site 6 miles north of the battalion headquarters (see Inclosure 1). At this location they were to set up a bivouac site and a construction complex to accommodate rock crushers and an asphalt plant.

h. On 1 October 1967 the battalion received the added area of responsibility which extended southerly from the existing AOR to the south bank of the Bong Son River. In addition to the extension of road responsibility, the battalion also received the mission to provide non-divisional engineer operational support to the 1st Cavalry Division north of the Bong Son river. This includes responsibility for repair and maintenance of the airfields located at LZ English and LZ Two Bits.

i. The Sa Huynh port facility was another task assigned to this battalion. This involved building a half mile access road through a marshy area and a 50 meter by 75 meter off-loading area. This project was completed on 15 October 1967, the date requested by the user.

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j. The first heavy monsoon rains, twelve inches in one 24 hour period, fell in the battalion AOR during the first week of October causing four washouts along the road. The battalion erected two panel bridges, one dry span, and one float bridge in less than 70 hours, thereby minimizing the effect of the washouts on this critical highway.

k. In the initial phase of upgrading QL-1 to MACV standards, the battalion built 790 feet of 2 way timber trestle bridge. This included three bridges over 100' in length. Pot holes are being filled, culverts extended, headwalls placed, drainage improved and portions of the road widened along the 35 miles from Bong Son to Duc Pho.

l. This quarter, the battalion hauled and compacted 82,600 cubic yards of fill, cleared 47 acres of land, opened two quarries and 5 fill sites, produced 8,324 cubic yards of crushed rock and surfaced 281,600 square yards of roadway.

5. Logistics.

a. Major logistical effort was expended in support of the 19th Engineer Battalion (C)(A) road upgrading effort. Large quantities of heavy construction materials had to be stockpiled and then moved to bridge sites to enable the construction of over 1,000 feet of timber trestle bridge. Also large quantities of Bailey bridge, cantonment area material, and drainage structures had to be requisitioned and moved to the construction sites.

b. The major problem was the long haul distances involved. Material had to be drawn from the depot in Qui Nhon, then moved north to the battalion S-4 yard, and finally transported to the job sites. The effort required to accomplish this taxed the transportation facilities to the limit.

6. Force Development.

(None)

7. Command Management.

(None)

8. Inspector General.

(None)

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9. Information.

(None)

Civic Affairs.

(None)

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Section II, Part 1, Observations (Lessons Learned)

1. Personnel.

(None)

2. Operations.

Storage

ITEM: Storage of construction material on job sites.

DISCUSSION: On bridges where piles are required this unit has found it necessary to prestock the piles at the site. On one occasion the piles were burned. However, it was observed that a few piles, separated from the rest, were not burned.

OBSERVATION: Large amounts of flammable construction material stored on a construction site should be dispersed as much as possible. This makes it more difficult for the enemy to destroy all the material.

Drainage

ITEM: Drainage of LOCs.

DISCUSSION: During the dry season, LOC maintenance included widening existing roads, raising the grade of existing roads, and repairing shoulders. In the process of these operations much material fell off the side of the road, covering existing culverts and preventing proper drainage.

OBSERVATION: Before filling operations begin all culverts should be marked and their exact location recorded. This data should be exchanged when road responsibilities are passed from one unit to another. Before heavy rains begin, these culverts should be lengthened, cleaned out, and repaired, if necessary.

Road Construction

ITEM: Road construction in marshy areas.

DISCUSSION: One mission assignment required the construction of a port access road across a very marshy area. This unit was faced with the problem of either removing the "muck" or finding another

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method of coping with the problem.

OBSERVATION: It was found that the weight of sand and fill used in constructing the road forced the unconsolidated "muck" to displace to the side due to the weight of the fill. By dozing a slot in the side of the road, vehicular traffic plus the weight of the fill displaced the "muck" from under the roadway resulting in an adequate base on which to construct the road.

Bailey Bridges

ITEM: Emergency intermediate supports to prevent complete destruction of Bailey bridges.

DISCUSSION: After construction of Bailey bridges, piles were driven on both sides of the bridge about one-third the length of the bridge from each abutment. A 12" X 14" bridge timber was placed between these two piles with its top a couple of inches below the bottom panel of the bridge.

OBSERVATION: If the ends of these bridges were blown, the bridge would drop only a few inches down to this intermediate support and not all the way down into the gap. This would make repairing the bridge a much easier and less time consuming process.

Pile Penetration

ITEM: Determining sufficient pile penetration.

DISCUSSION: On the job site it is sometimes difficult to determine when piles have been driven far enough for proper bearing. This is particularly true when they can't be driven to refusal. For a known type of pile bent and a certain size drop hammer, it is possible to draw a graph relating the hammer drop distance and the average penetration of the last six blows (see Inclosure 2).

OBSERVATION: On the job site it is easy for the Officer or NCO in charge to determine the drop of the hammer and to determine the average penetration. Then he has to only look on the chart to determine whether he has reached the desired bearing strength, represented as penetration not exceeding a certain amount.

Bridge Construction

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Quarterly Period Ending 31 October 1967.

ITEM: Building new bridges next to existing ones.

DISCUSSION: When upgrading QL-1 in RVN it was found that in many instances there were already old, narrow, French concrete slab bridges or Bailey bridges across the gaps. Instead of tearing down these one-lane bridges, when replacing them with two-lane timber trestle bridges, this unit built the new bridge beside the existing bridge.

OBSERVATION: There were two major benefits reaped from this procedure. First, the construction effort was off to the side of the road and there was little disruption to the normal flow of traffic. Secondly, after completion of the timber trestle bridge, the original bridge as well as the new bridge was still standing thus the VC would have to destroy both bridges to assure interdiction of the LOC.

ITEM: Determination of Required Area Under Bridges.

DISCUSSION: In the absence of complete hydrological data it is not possible to determine accurately the area required under bridges to accommodate water flow during the monsoon season.

OBSERVATION: In most of the battalion AOR the railroad is parallel to and adjacent to highway QL-1. The railroad has withstood many monsoons. Hence a safe approximation is to construct a highway bridge of such length and height that the area under the bridge is the same as that under the adjacent railroad bridge.

3. Training and Organization:

Training

ITEM: Mine sweep training and M-79 firing.

DISCUSSION: Many of the combat engineers recently assigned to this organization had received little if any training in the operation of the transistorized mine detector. Also, many have never fired the M-79 Grenade Launcher prior to assignment to a unit in Vietnam.

OBSERVATION: This battalion had to conduct formal battalion-wide instruction on both of these subjects to insure that all personnel utilizing this equipment were proficient.

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TOE

ITEM: Engineer company motor sergeants.

DISCUSSION: The present TOE 5-37E authorizes a motor sergeant grade E-5 in the combat engineer company. With all the maintenance problems incurred because of isolation of company size units, frequent attachment of heavy equipment, resupply difficulties, and extreme weather conditions, the motor sergeant has as much or more responsibility than any engineer squad leader. The squad leader is authorized the grade of E-6.

OBSERVATION: Recommend that the TOE be modified to authorize the motor sergeant to be grade of E-6. This should also help to retain more personnel in the service in the 62B MOS field.

4. Intelligence.

(None)

5. Logistics.

(None)

6. Equipment and Maintenance.

Engineer Equipment

ITEM: Starters for 20 ton rough terrain cranes.

DISCUSSION: Starters for the 20 ton rough terrain crane, American model 2380, have been almost impossible to get through supply channels.

OBSERVATION: Two other starters will fit and function properly:

1. The 5 ton truck starter, FSN #2920-226-651.5. 2. GM 4-71 diesel engine starter FSN #2920-725-1788.

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Quarterly Period Ending 31 October 1967.

Section II, Part 2, Recommendations.

1. Personnel.
(None)
2. Operations.
(None)
3. Training and Organization.
F-5 of F-7 Motor Sergeant
4. Intelligence.
(None)
5. Logistics.
(None)
6. Others.
(None)

2 Inclosures

1. Location overlay
2. Penetration graph

Andrew C. Remson, Jr.
ANDREW C. REMSON, JR.
LTC, CE
Commanding

DISTRIBUTION:

- 5-45th Engr Gp (Const)
- 8-CG, 18th Engr Bde
- 6-CG, USAECV
- 3-CG, USARV, ATTN: AVHGC-DH
- 2-CINC, USARPAC, ATTN: GPOP-OT (Airmail)

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EGD-3 1st Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65)
for Quarterly Period Ending 31 October 1967

HEADQUARTERS, 45TH ENGINEER GROUP (CONST), APO 96238,
22 November 1967

THRU: Commanding General, 18th Engineer Brigade, ATTN:
AVBC-C, APO 96377
Commanding General, USA Engineer Command Vietnam
(Prov), ATTN: AVCC-P&O, APO 96491
Commanding General, United States Army, Vietnam,
ATTN: AVHGC-DH, APO 96307
Commander in Chief, United States Army, Pacific,
ATTN: GROF-OT, APO 96558

TO: Assistant Chief of Staff for Force Development,
Department of the Army (ACSFOR DA), Washington,
D.C. 20310

1. Operational Report-Lessons Learned of the 19th
Engineer Battalion (C) (A) for the Quarterly Period ending
31 October 1967 is forwarded.

2. Concur with observations and recommendations
except:

a. Pile Penetration Observation: A simplified
pile penetration chart as used by the 19th Engineer Bat-
talion (C) is essentially a field expedient devised to
be employed during military operations.


b. Engineer company motor sergeants: Upgrading
of the position of the motor sergeant in the combat engin-
eer company to the grade of E-6 has been proposed in recent
MTOE recommendations submitted to US Army Engineer Command
(Vietnam).

//

EGD-3 1st Ind 22 November 1967 14
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65)
for Quarterly Period Ending 31 October 1967

c. This headquarters has withdrawn inclosure 1
showing unit locations, which is considered confidential
information.

1 Incl
wd incl 1


K. T. SAWYER
Colonel, Corps of Engineers
Commanding

15
AVBC-C (10 Nov 67) 2nd Ind CPT Storat/jah/DBT-163
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 31 October 1967

Headquarters, 18th Engineer Brigade, APO 96377

28 NOV 1967

TO: Commanding General, U.S. Army Engineer Command, Vietnam (Prov),
ATTN: AVCC-P&O, APO 96375

1. This headquarters has reviewed the report submitted by the 19th Engineer Battalion (C) (A), as indorsed, and considers it an accurate description of unit activities and accomplishments during the reporting period ending 31 October 1967.

2. Concur with the observations and recommendations of the Battalion Commander as modified by the Group Commander with the following comment added:

Reference Section II, Part 1, para 2 - Pile Penetration.
Concur with the comments of the Group Commander concerning the simplified pile penetration chart. It should be noted that the chart does not take into consideration the type of soil into which the pile is driven.

Harold J. St. Clair
HAROLD J. ST CLAIR
Colonel, CE
Deputy Commander

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AVCC-P&O (31 Oct 67) 3d Ind
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65), for
Quarterly Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND
VIETNAM (PROV) APO 96491

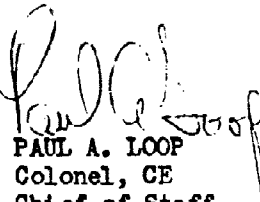
7 DEC 1967

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DH
APO 96375

The subject report, submitted by the 19th Engineer Battalion, has
been reviewed by this headquarters and is considered adequate.

FOR THE COMMANDER:

1 Incl
nc


PAUL A. LOOP
Colonel, CE
Chief of Staff

Info cys furn:
CG, 18th Engr Bde
CO, 45th Engr Gp
CO, 19th Engr Bn

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AVHGC-DST (31 Oct 67) 4th Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending 31 October 1967.

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 10 DEC 1967

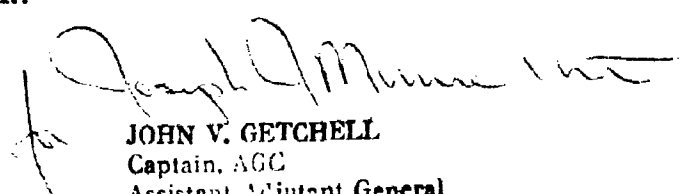
TO: Commander in Chief, United States Army, Pacific, ATTN: GPDP-DT,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1967 from Headquarters, 19th Engineer Battalion (Combat) (Army) (AZIA) as indorsed.

2. Concur with report as indorsed. Report is considered adequate.

FOR THE COMMANDER:

1/ Incl
nc


JOHN V. GETCHELL
Captain, AGC
Assistant Adjutant General

cc: HQ, 19th Engr Bn (Combat) (Army)
HQ, US Army Engr Comd

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GPOP-DT(31 Oct 67)

5th Ind

SUBJECT: Operational Report for the Quarterly Period Ending 31 October
1967 from HQ, 19th Engr Bn (Cbt)(Army) (UIC: WAZ1AA) (RCS CSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96558

20 DEC 1967

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding
indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:



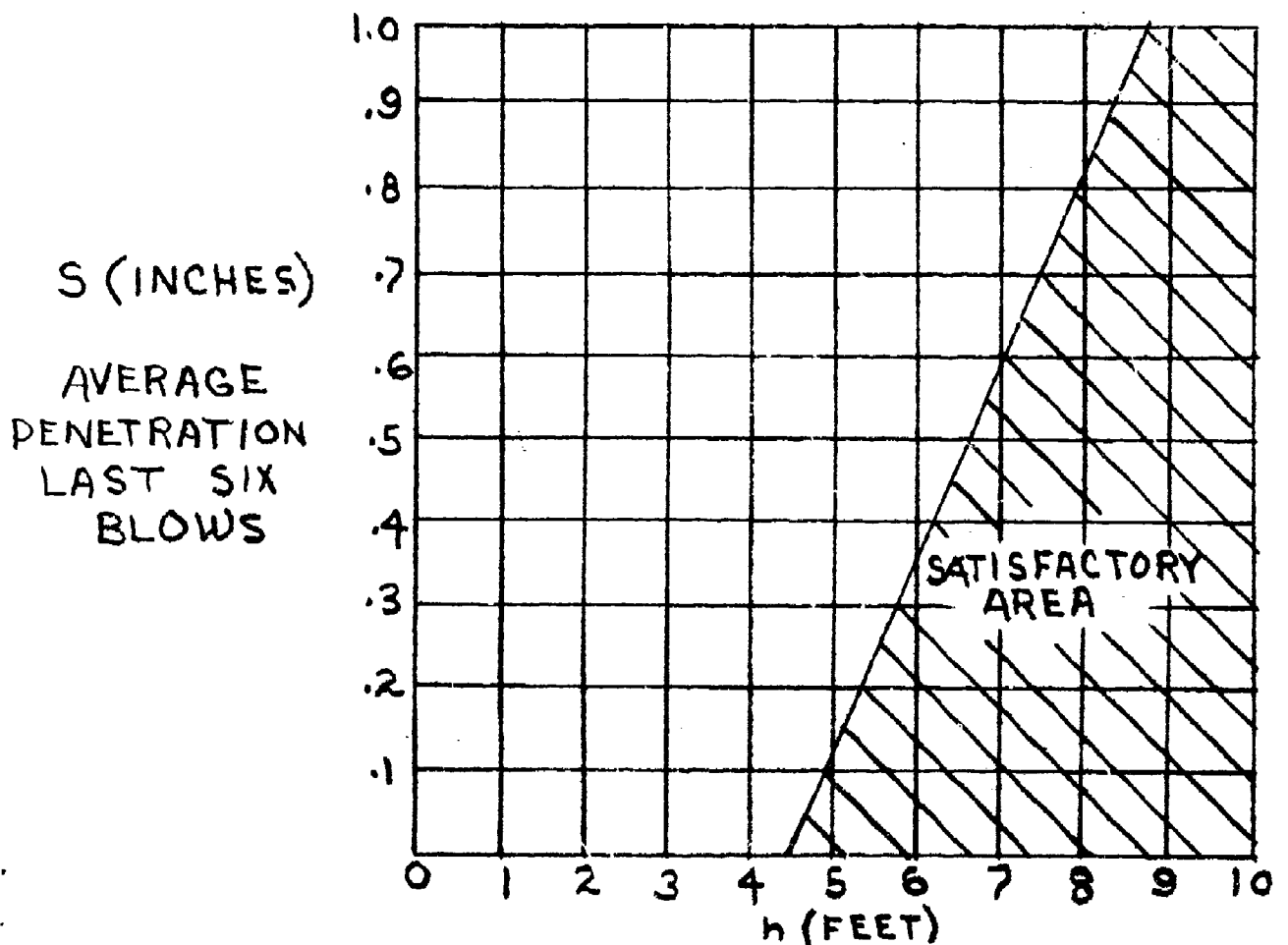
K. F. OSBOURN
MAJ, AGC
Asst AG

19

FOR A SIX PILE BENT

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DISTANCE HAMMER IS DROPPED

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| CO, 19th Engineer Battalion (Combat)(Army) | | | |
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